**IN THE SPECIFICATION**

Please replace paragraph [0041] at the end of page 10 and the beginning at page 11, with the following rewritten paragraph:

[0041] Figure 8 shows x-ray diffraction data and TEM images for HMS control pellets heated at 1500°C for 8 hours (Figures 8a, 8b), 1215°C for 7 hours (Figures 8c, 8d), and 1000°C for 5 hours (Figures 8e, 8f). The XRD pattern of the pellet annealed at 1000°C for 5 hours (Figure 8e) shows a low intensity/low angle (100) hexagonal peak, but no crystallized ~~crystoballite~~ crystobalite peaks. The broad peak observed at 2θ~22.5° may be attributed to the presence of either amorphous silica or a low order transitional phase between the hexagonal mesoporous silica phase and crystallized ~~crystoballite~~ crystobalite phase. The TEM image of the same pellet (Figure 8f) is consistent with the XRD data; the image shows a substantially dense body with some remaining porosity, but no defined structural features. The HMS pellet heated at 1000°C has a BET surface area of 58 $m^2/g$. This relatively low BET surface area is due to the natural densification of the material with temperature. When the temperature is increased to 1215°C for 7h, the XRD pattern (Figure 8c) shows the presence of crystallized ~~crystoballite~~ crystobalite. Due to full densification of the pellet, the BET surface area for this HMS pellet is below detection limits of the instrumentation used for the measurements. The crystal phase (Figure 8a) and micro-structural characteristics (Figure 8b) of the HMS pellet heated at 1500°C appear to be unchanged from those observed at 1215°C. However, the density of the HMS pellet heated at 1500°C decreases nearly 10% from that of the pellet heated at 1215°C. This result can probably be attributed to partial evaporation of some material from the sample heated to the higher temperature.

Please replace paragraph [0042] at the end of page 11 and the beginning at page 12, with the following rewritten paragraph:

[0042] Figure 9 shows x-ray diffraction data (XRD) and TEM images obtained for HMS/$HfO_2$ nanocomposite pellets heated at 1500°C for 8 hours (Figures 9a, 9b),

1215°C for 7 hours (Figures 9c, 9d), and 1000°C for 5 hours (Figures 9e, 9f). At 1000°C, the XRD pattern (Figure 9e) displays a clear hexagonal peak at very low angle of 2θ~1.5°, indicating that heating at 1000°C promoted ordering in the hafnia-filled hexagonal mesostructure, whereas the hexagonal peak was not visible in the HMS/$HfO_2$ material that was heated at 500°C. Crystalline ~~crystoballite~~ crystobalite peaks are not detected in the sample heated at 1000°C, but a very broad peak with 2θ~30° appears in the pattern shown in Figure 5a. The TEM (Figure 9f) shows a homogeneous microstructure in which hafnia 12 is fully dispersed within the pores of the silica mesostructure 10. The BET surface area of about 1$m^2$/g is, as expected, much lower than that of the HMS control material, as the $HfO_2$ nanoparticles occupy the pores within the silica mesostructure. At 1215°C, the intensity of the hexagonal peak observed in the XRD pattern (Figure 9c) decreases and shifts to lower 2θ values. At the same time, peaks near 2θ~30° are clearly defined, indicating that hafnia-based nanoparticles have started to develop. However, in contrast to the HMS control pellets calcined at the same temperature, crystalline ~~crystoballite~~ crystobalite peaks are not observed in the XRD pattern shown in Figure 5c. The TEM image (Figure 9d) shows a very low order mesoporous structure in which hafnia nanodispersoids 12, each having a diameter of about 20 nm, are homogeneously dispersed throughout the HMS structure 10, confirming that a high-temperature nano-composite was indeed obtained. For HMS/$HfO_2$ pellet that was heated at 1500°C, the XRD pattern (Figure 9a) shows that the peak assigned to the hexagonal mesoporous structure has almost disappeared, whereas both crystalline ~~crystoballite~~ crystobalite and crystallized hafnia peaks are present. The TEM image (Figure 9b) shows that hafnia continues to segregate out of the mesoporosity and promotes the controlled growth of the nano-dispersoids. In addition, the BET surface area HMS/$HfO_2$ pellet that was heated at 1500°C is almost double that of the HMS/$HfO_2$ pellet that was heated at 1215°C. The TEM image (Figure 9b) of the pellet that was heated at 1500°C shows visible reticular porosity resulting from evaporation of $SiO_2$. The increased porosity accounts for the lower density of the samples that were heated to 1500°C.